11. Yulia

Program Name: Yulia.java Test Input File: yulia.dat

Yulia enjoys word searches, but she has decided to crank it up a notch. In word searches, given a word bank, she tries to find words in vertical or horizontal directions. In a new word search, given a word, she aims to find which words in the word search most closely match the word. A word in the word search can closely match the given word if it is missing some letters or has some extra letters.

For example, suppose Yulia is looking for the word "hatelice" in the following word search:

```
chAlice
bbbbbbh
ccccccl
ddddddi
eeeeeeC
fFfffe
Ggggggn
```

The word “hatelice” never shows up verbatim in this word search. However, there are two words that are close. The word "chalice" and "ehlicen". The word “chalice” is close to the word “hatelice” because the “c” needs to be added in the front of the word, and the “te” needs to be removed: “chatelice”. The number of unaltered letters is 6. When we do the same for "ehlicen", we get a similar result: “ehatelicen”. In this case, the number of unaltered letters is 5. Therefore, “chalice” is closer to “hatelice” than “ehlicen”.

For each word search and the given word, output the number of unaltered letters in the closest word to the given word. Please note that Yulia only looks for words vertically and horizontally, and she always ignores case.

Input: An initial value N, followed by N data sets. Each data set will begin with an integer X, which represents the size of the word search to follow. Each of the following X lines will have X characters representing the word search. The line following the word search will contain Yulia's search word.

Output: The number of unaltered letters of the closest word in the word search to the search word.

Sample Input:

```
3
7
chAlice
bbbbbbh
ccccccl
ddddddi
eeeeeeC
fFfffe
Ggggggn
hatelice
5
JAZZY
FUZIL
TIZZY
MUJIK
UEWYY
spazzy
6
ATATQT
TRTATA
AMPTAT
TATATN
DTATAT
TATETA
ATATATATATATAT
```

Sample Output:

```
6
4
5
```